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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,584	10/24/2003	Mukerrem Cakmak	089498-0447	9481
39905	7590	05/05/2006	EXAMINER	
ROETZEL AND ANDRESS 222 SOUTH MAIN STREET AKRON, OH 44308			LEE, RIP A	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 05/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,584

Applicant(s)

CAKMAK ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on November 14, 2005. Applicant's response and affidavit under 37 C.F.R. § 1.132 was filed on February 14, 2006. Claims 11-20 remain.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qian *et al.* (U.S. 6,407,155) for the same reasons presented in previous office actions.

Briefly, Qian *et al.* relates to methods for making nanocomposite materials by forming a mixture of polymer matrix and nanoparticulate filler in the amount of 0.05-60 wt % and melt blending said mixture. Although the amount of nanoparticulate filler is not expressed in terms of a volume percentage, it would have been obvious to one of ordinary skill in the art to believe that the 0.05-60 wt % range encompasses the recited ranges of 0.01-10 vol %, 0.1-10 vol %, and 1-10 vol % ranges set forth in the present claims, especially in light of the fact that the range disclosed in the patent spans two orders of magnitude. Nanocomposites of the invention are used in fabrication of films (col. 20, line 64), and Qian *et al.* teaches the technique of biaxial stretching of the film to increase dimensional stability (col. 21, lines 16-31). A measure of strain hardening is not elucidated in the reference, however, a reasonable basis exists to believe that such a phenomenon is imparted in the films of the invention, especially in view of the fact that the process outlined in Qian *et al.* follows that described in the instant invention.[†]

Since the PTO does not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference with respect to nanoparticle loading in terms of volume percentage and to strain hardening in the compositions of the prior art. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Response to Arguments

3. Applicants traverse the rejection of claims under 35 U.S.C. 103(a) as being unpatentable over Qian *et al.* The declaration filed under 37 C.F.R. § 1.132 has been carefully reviewed. Applicants' arguments have been considered fully, but they are not persuasive.

Applicants' elucidation of the technical aspects of Qian *et al.* is most appreciated. It becomes apparent that the prior art displays displacement data which is dissimilar to stress-strain measurements exhibited in the instant specification. Applicants have also indicated that stress-strain measurements were not conducted as per the technique described in the specification.

The independent claim recites a process comprising three steps: (i) blending polymer with nanoparticles, (ii) forming a film, and (iii) subjecting the resulting composition to strain hardening. The claim does not describe the extent and nature of strain hardening, and the claim may be qualified to delineate specific meaning to the term "strain hardening" (*i.e.*, experimental conditions, ASTM designation, *etc.*). It is the examiner's position that Qian *et al.* discloses the requisite three steps of the claims. With regard to the strain hardening phenomenon, a *prima facie* case of obviousness was established over the entire disclosure of Qian *et al.* (and not just the pictorial data) that strain hardening occurs during biaxial stretching. In response, Applicants have indicated that an accurate determination of whether strain hardening occurred in the composites of the prior art is not possible from the data presented therein. This point notwithstanding, the burden still rests with Applicants to furnish objective evidence, rather than simple argument, to show that the strain hardening phenomenon does not occur in the compositions of Qian *et al.* To date, Applicants have not met their burden of proof. Therefore, the rejection of record has not been withdrawn.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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May 1, 2006



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700